

Title

Be/X-ray pulsar binary science with LOFT

Presenter

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Abstract

Accretion disks are ubiquitous in astronomical sources. Accretion powered pulsars are a good test bed for accretion disk physics, because unlike for other objects, the spin of the neutron star is directly observable allowing us to see the effects of angular momentum transfer onto the pulsar. The combination of a sensitive wide-field monitor and the large area detector on LOFT will enable new detailed studies of accretion powered pulsars which I will review. RXTE observations have shown an unusually high number of Be/X-ray pulsar binaries in the SMC. Unlike binaries in the Milky Way, these systems are all at the same distance, allowing detailed population studies using the sensitive LOFT WFM, potentially providing connections to star formation episodes. For Galactic accreting pulsar systems, LOFT will allow measurement of spectral variations within individual pulses, mapping the accretion column in detail for the first time. LOFT will also provide better constraints on magnetic fields in accreting pulsars, allowing measurements of cyclotron features, observations of transitions into the centrifugal inhibition regime, and monitoring of spin-up rate vs flux correlations. Coordinated multi-wavelength observations are crucial to extracting the best science from LOFT from these and numerous other objects.